***Preliminary Program***

*(December 3, 2018)*

# Advances in Optics for Biotechnology, Medicine and Surgery XVI

**June 2-6, 2019**

**Fairmont Tremblant
Mont Tremblant, Quebec, Canada**

**Conference Co-Chairs**

**Erin Buckley**

Emory University, USA

**Christophe Moser**

Polytechnique Fédérale de Lausanne (EPFL), Switzerland

**Brian Pogue**

Dartmouth College, USA

**David Sampson**

University of Western Australia, Australia



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**Engineering Conferences International**

**32 Broadway, Suite 314 - New York, NY 10004, USA**

**www.engconfintl.org –** **info@engconfintl.org**

Sunday, June 2, 2019

16:00 – 18:00 Conference Check-in

18:00 – 19:30 Dinner

19:30 – 21:00 **Session I: TBD**

Session Chairs: Brian Pogue

 Christophe Moser

19:30 – 20:00 New technological directions for imaging at depth

 Kishan Dholakia, University of St Andrews

20:00 – 20:30 Imaging multiple molecular markers under surgical light illumination

 Viktor Gruev, University of Illinois at Urbana-Champaign

20:30 – 21:00 Molecular guided surgery advances

 Eban Rosehthal, Stanford University, USA

21:00 – 22:00 Poster Session

Monday, June 3, 2019

07:00 – 08:30 Breakfast and Discussion Time

 **Session II: Engineering Optical and Fiber Systems**

Session Chair: Rongguang Liang, University of Arizona

08:30 – 09:00 Design, fabrication, and test of micro-optics for biomedical applications

 Rongguang Liang, University of Arizona

09:00 – 09:30 Development of compact ultrafast fiber laser sources for nonlinear optical microscopy

 Khanh Kieu, University of Arizona

10:00 – 10:30 OCT for image-guided therapy and surgery

 Thomas Milner, Texas A&M University

10:30 – 11:00 Coffee break and discussion time

 **Session III: Optical-Radiation Interactions**

Session Chair: Brian Wilson, University of Toronto

11:00 – 11:30 Radiation-optical interactions

Brian Wilson, University of Toronto

11:30 – 12:00 Liposomal optical activation delivery of agents

 Jonathan Lovell, University of Buffalo

12:00 – 12:30 TBD

12:30 – 14:00 Lunch

14:00 – 18:00 Networking/Discussion

18:00 – 19:30 Dinner

 **Session IV: Neurophotonics**

Session Chair: Chair Erin Buckley, Emory University

19:30 – 20:00 Increasing depth sensitivity and brain specificity of diffuse correlation spectroscopy blood flow measures

 Maria Angela Franceschini, Massachusetts General Hospital

20:00 – 20:30 TBD

 Andrew Dunn, University of Texas at Austin

20:30 – 21:00 Non-invasive optical measurement of cerebral critical closing pressure in

 pediatric hydrocephalus

 Wesley Baker, Children’s Hospital of Philadelphia

21:00 – 22:00 Poster Session

Tuesday, June 4, 2019

07:00 – 08:30 Breakfast and Discussion Time

 **Session V: Optics and Biomechanics**

Chair: David Sampson, University of Western Australia & University of Surrey

08:30 – 09:00 Biomechanics of cells and tissues: What can we learn when we combine mechanical stimuli with microscopy?

 Davide Iannuzzi, Vrjie University

09:00 – 09:30 Translational shear-wave optical coherence elastography

 Kirill Larin, University of Houston

10:00 – 10:30 TBD

 TBD

10:30 – 11:00 Coffee Break and Discussion Time

 **Session VI: Molecular Guided Surgery**

Chair: Sylvain Gioux, University of Strasbourg

11:00 – 11:30 TBD

 Jonathan Lovell, Intuitive Surgical

11:30 – 12:00 TBD

Frederic Leblond, University of Montreal

12:00 – 12:30 TBD

 Sylvain Gioux, University of Strasbourg

12:30 – 14:00 Lunch

14:00 – 18:00 Networking/Discussion

18:00 – 19:30 Dinner

 **Session VII: Commercialization Case Studies**

Chairs: Kate Bechtel, Triple Ring Technology

19:30 – 20:00 Development of the MediBeacon transdermal GFR measurement system

 Martin Debreczeny, Medibeacon Inc

20:00 – 20:30 TBD

 Nicolas Loebel, Ondine Biomedical, Inc.

20:30 – 21:00 TBD

 David Cuccia, Modulated Imaging, Inc.

21:00 – 22:00 Poster Session

**Wednesday, June 5, 2019**

07:00 – 08:30 Breakfast and Discussion Time

 **Session VII: Microscopy Advances**

Chairs: Paul Campagnola, University of Wisconsin

08:30 – 09:00 Advances in computational wide field imaging

 Peter So, Massachusetts Institute of Technology

09:00 – 09:30 TBD

 Elizabeth Hillman, Columbia Uiversity

10:00 – 10:30 Spectroscopic single-molecule localization microscopy (sSMLM)

 Hao Zhang, Northwestern University

10:30 – 11:00 Coffee Break and Discussion Time

 **Session VIII: Imaging Through Turbid Media**

Chairs: Ivo Vellekoop, University of Twente

11:00 – 11:30 TBD

Herve Rigneault, Insitut Fresnel

11:30 – 12:00 TBD

 Ivo Vellekoop, University of Twente

12:00 – 12:30 TBD

 Emmanuel Bossy, University of Grenoble

12:30 – 14:00 Lunch

14:00 – 18:00 Networking/Discussion

18:00 – 19:30 **Session IX: Learning in Optical Systems**

Session Chair: Aydogan Ozcan, University of California Los Angeles

18:00 – 18:30 **TBD**

 George Barbastathis, Massachusetts Institute of Technology

18:30 – 19:00 **TBD**

 Rafael Piestun, University of Colorado at Boulder

19:00 – 19:30 **TBD**

Aydogan Ozcan (introduced by C. Moser), University of California Los Angeles

19:30 – 21:30 Farewell Dinner

**Thursday, June 6, 2019**

07:00 – 08:30 Breakfast and Discussion

08:30 – 11:00 Checkout and Departures